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ARCHEOLOGY AND ETHNOLOGY.¹**The International Congress of Anthropology and Pre-historic Archeology of Paris.**—(*Continued from page 503.*)

Fourth Question.—"The Chronologic Relations between the Civilizations of the Ages of Stone, of Bronze, and of Iron."

Monsieur Judge Piette continued the discussion from the last question by continuing the description of his discoveries in the grotto of Mas d'Azil. The principal idea which he sought to elucidate in his dissertation was of an epoch of transition which should be intermediate between the cavern period, the Madalenien epoch, and the polished stone age. He declared that the human industry of the Madalenien epoch had not been uniform in its duration. In the Pyrenees there were four phases of this civilization, which might be grouped into two series, the first or earliest represented by the bones of the horse, and the later that represented by the bones of the deer. Thus, going from the bottom to the top there were four strata, the first that of the ox (*Bos*), the second that of the horse (*Equus*), the third that of the reindeer, and the fourth that of the common deer. In the last epoch the climate, which had been until then dry and cold, became warmer and humid. The reindeer became rare, and the art of the epoch fell into decadence. This was the prelude to the age of polished stone. The evidence which he cited to prove these conclusions was derived from his excavations in the Grotte Mas d'Azil. He described the fauna, the industrial implements in bone, the shells, and pieces of pottery, and insisted particularly upon the discovery which he had made of the pebbles which had been colored with the oxide of iron, ground and made into a paint, and applied with a brush. He also described the designs, some of which were in straight lines, parallel, cutting each other at right angles, chevron, fern, and curious and rare concentric circles with dots in the center.

While many of the strata belong to the age of the caverns, and were paleolithic, yet some of those on the surface were neolithic; and between the two, Judge Piette though he could identify a transition in the civilization, and he undertook to make two series of this transition, and to give to it, the first and lowest, the name of *acesmolithic* and to the top that of *cemolithic*, the one being the commencement and the other the completion of the art of polishing stone. This

¹ This department is edited by Dr. Thomas Wilson, Smithsonian Institution, Washington, D. C.

paper was followed by Mr. Boule, who said that it attacked the theory of hiatus between the paleolithic and neolithic ages which had been heretofore recognized by nearly all prehistoric anthropologists. But he declared that there was more to this theory of Judge Piette than had been supposed, for it corresponded largely with the discoveries made by himself and M. Cartailhac in the Grotte de Reilhac, where they found objects of human industry which suggested an intermediate stage between the two periods and not a hiatus.

M. Adrien de Mortillet recalled that M. Salmon had already made similar discoveries, and that he had given to the first period mentioned by Judge Piette the name of Campinienne. But Judge Piette defended the nomenclature which he had made. A large discussion took place over this subject; many instances and localities were brought to the attention of the congress, and while nothing was permanently decided or determined concerning the question at issue, yet the members were requested to investigate with particularity and in detail this question of the possible hiatus, or whether there was an age of transition intermediate between the two great ages of stone. M. Cartailhac cited M. de Mortillet as having said, in 1874, that the hiatus, instead of being a veritable one, was simply our want of knowledge, and he continued the discussion by a description of the objects found by himself and M. Boule in their excavations in the Grotte de Reilhac, near Gramat; at which I had assisted.

Dr. Sophus Müller, of Copenhagen, had commenced the methodical publication of the types of objects of the age of polished stone in Scandinavia. The first part of his work, comprising 270 figures, was presented before the congress. The first epoch of prehistoric man in Denmark was that of the shell heaps. The cutting implements common to these shell heaps are unknown in the sepulchres; the hatchets were chipped and not polished. The second epoch was represented by forms more developed, among which were hatchets and chisels with the edge polished. A few of these were found in the Danish sepulchres, which is contrary to that in France. They, or the knowledge to make them, were probably brought from the west, where they appeared to the author to belong to the civilization of the megalithic monuments. After this epoch came that of megalithic monuments, more recent than those of France; simple dolmens, those with small and single chambers, are probably the most ancient. The large chambers and the duplication of them are probably the types more recent. The earlier and simpler dolmens of the most archaic forms have a certain relation to the same monuments in Asia. According to Dr. Müller, the

theory of the Scandinavian archeologists as to the relative age and epoch of these monuments is confirmed.

Monsieur Ad. de Mortillet coincided with Dr. Muller as to the anteriority of the small dolmens of Scandinavia. He said it derived support from an investigation of those of France, and also of those in Algeria, which he had been charged by the Commission of Prehistoric Monuments to examine and describe.

Dr. Verneau gave descriptions of his studies of the antique monuments of the Canary Islands.

Dr. Hamy took exception to some of the conclusions of M. de Mortillet, and objected to premature generalization which should include different countries. He declared in favor of special conclusions for each region. He proposed to publish a work giving the results of his investigations in Algeria.

Monsieur Felix Gaillard, of Plouharnel, argued in favor of the contemporaneity of the stone cists as places of sepulture with the dolmen. He cited many cases from his locality in Plouharnel, Carnac, etc., Morbihan.

Monsieur B. Reber described the tombs in the neighborhood of Geneva, made after the fashion of the stone cist,—that is, with flat, unwrought, rude stones.

Monsieur Montelius, of the Prehistoric Museum of Stockholm, gave a most interesting paper upon "The Chronology of the Age of Bronze in Europe." He said there were no coins, and consequently no dates, which belonged to the age of bronze, but in Northern and Central Europe there had been found among the pieces of bronze a vase, a fibula, and some other objects, which were undoubtedly of Italian or southern manufacture. The age of bronze in Scandinavia, according to M. Montelius, divides itself into six periods. In Italy, in France, and elsewhere in Europe, one can distinguish but four periods. The difference of the date of the origin of bronze between Italy and Northern Europe is not so great as we have heretofore believed. According to the most detailed and particular investigation of M. Montelius, he thought himself able to divide the age of bronze in Scandinavia into six periods, which were thus distributed: The first was from 1500 to 1300 B. C.; second, from 1300 to 1100; third, from 1100 to 900; fourth, from 900 to 750; fifth, from 750 to 550; sixth, from 550 to 400, and including the transition towards the age of iron. One who has not seen M. Montelius, and compared with him these divisions, can scarcely understand how he is able to distinguish them, what the evidences are, or their character, on which he bases his theory; and

yet to me, who had seen and heard Monsieur Montelius in all the minutia, extent, and number of his investigations, the proofs were highly satisfactory and convincing.

M. Montelius continued with another paper,—“The Preclassic Civilization of Italy.” He recommended to the prehistoric archeologist the study of this civilization, and declared that it had never been satisfactorily done either by the prehistoric archeologist, nor yet by the classic archeologist. He said the Italian objects found in Central Europe, even up to the north, established the fact of commerce, or, at least, relations between the peninsula of Italy and the center and north of Europe in times of high antiquity. He had chosen specimens and types of objects which are exhibited in the museums, and also those shown only in publications, by means of which he has formed an album containing no less than two thousand figures, which are classed chronologically and divided into four parts geographically. The first was Sardinia; the second, Sicily and Southern Italy; the third, Central Italy; and fourth, Northern Italy. Each one of these divisions was again subdivided into chronologic periods, thus: For Northern and Central Italy he had four periods: 1. Objects which were of simple form in bronze and sometimes in copper. The hatchets were rude, flat, with only an indicated edge. 2. Celts, hatchet-shaped. 3. Celts, with wings and the most ancient type of fibula. 4. Celts, with a stop and a socket; the fibula made of spiral form and with a simple arch. During the age of iron the civilization divided itself, and changed according as it was on the one or the other side of the Apennine mountains. To the north was the fifth period of Benacci, sixth of Arnoldi; both of which periods were of Villanova and Pre-Etruscan. 7. The period of La Certosa or Etruscan. 8. The period Celtic or Gaulois. On the south of the Apennines was the fifth,—the first period of the age of iron. 6. Periods of Proto-Etruscan, with a notable invasion, bringing new and strange elements; and 7th was the Etruscan period. Supposing the Etruscans to have arrived in Etruria by sea, they had not traversed the Apennines till a much later epoch.

This communication of M. Montelius was exceedingly interesting to me, not alone because of his investigations into the age of bronze in the Scandinavian countries, of which I have already favorably spoken, but because I had been over this preclassic country of Italy, and had been struck many times with what I conceived to be the errors of classic scholars, with their apparent failure to comprehend the modern science of prehistoric archeology, with the difference which it had

wrought in our opinions concerning the antiquity, and particularly of its occupation, of Europe, and consequently of Italy. I have neither the competence nor the opportunity to make any such investigations as had been done by M. Montelius. I was all the more satisfied and gratified to find that he, a prehistoric archeologist, had done so, and that his conclusions were so much in harmony with my own.

Monsieur E. Vouge described the extreme west of Lake Neuchatel and changes which have taken place therein. He showed various stratigraphic charts by which the strata of the different ages were known and to be recognized, and from this examination he arrived at a series of conclusions. The lowest, and consequently the earliest, stratum containing evidence of human industry was that which belonged to the neolithic age. But these people did not long remain at this point. Their houses and establishments, once burned, were never reconstructed. But their occupation of this country was evident, and that it was extended cannot at all be doubted. It was separate, distinct, and anterior to that of the age of bronze or of the Helvetes, which followed. It is difficult to say at what epoch of time the men of the bronze age made their appearance on Lake Neuchatel. The stations of bronze did not remain intact because of the movements of the lake, which, for 1,500 years or more, have changed the borders. There was, said M. Vouge, at this point a commercial station. There may have been also there, or in the neighborhood, a foundry or manufactory, but he thought it more than likely to have been only a commercial station, for they found, in what might have been called or served as a warehouse or salesroom, swords in their scabbards, shears for shearing, and knives, also in their scabbards. All these were bound up in packages, whether separately or together is not stated, but tied together, as though they were intended for sale, or possibly for transportation, so, in any event, it was considered as a commercial station, either of sale or transshipment. This was all covered with turf, and with the débris and clay, and is distinctly and definitely separated from the antiquities of the Gallo-Roman epoch, which are to be found on the turf and scattered through it.

Monsieur Baron Joseph de Baye gave a résumé of his excavations in the Gauloise sepultures in Saint-Jean-sur-Tourbe, in the Department of Mame. There were two levels to these tombs, and the funeral furniture, torques, bracelets, fibulas, lances, beads of glass, of amber, of bone, etc., were exceedingly important, as they were in part different from anything that this district had yielded to this time. In one of the tombs was found the skeleton of a young man, from sixteen to

twenty years, with skull abnormal, with numerous os wormiens, and possibly artificially deformed, following a custom that prevailed in the east of Gaul. The skeleton still carried about the neck and on the arms beads of amber of large size and great number. On a bronze wire were strung the small beads of glass, amber, coral, a boar's tooth, pebbles, fossil shells, and a small statuette. The latter was anterior to the Roman epoch, but was similar to those which have been found in the Departments of Meurthe-et-Moselle, Argovie, Hungary, and in Caucase, and was a new evidence of the relations between Gaul and the Orient.

Monsieur Cartailhac presented the results of an archeologic voyage made by him to the Balearie Isles. He showed a most beautiful series of photographs, which represented the ancient city and edifices, and the objects most notable belonging thereto.

(To be continued.)

Remains of the Worship of Ashtaroth in Palestine.—To this day the *fellaheen* (peasants) of Palestine have the custom of ascending some high place, at the full of the moon, and pouring out olive oil, as an oblation, on some particular rock, long used for the purpose, and having a hollowed space on top,—being, in fact, a rude sort of altar. When questioned on the subject, they can give no reason for the act, except that it is an old custom,—that their forefathers did so from time immemorial. As they are Mohammedans, and therefore abhor all idolatrous practices, this is all the more remarkable. It seems to be unquestionably a remnant of the ancient worship of Ashtaroth, the two-horned or crescent-bearing goddess, and which once prevailed so extensively in this country.

Ashtaroth was especially the goddess of the Zidonians, and the Israelites fell at once into the idolatry when they slew the Zidonians at Dan, preserving the idol and the priests of this people, in order to continue the abomination. The worship of Ashtaroth was set up in Jerusalem, and on the hills in its vicinity, King Solomon himself building high places for the purpose, and participating therein. Interesting indications of this are revealed at the present date. From time to time images of the goddess are found in excavating in Jerusalem and its neighborhood, as well as in the Moabite country, where this form of idolatry greatly prevailed. These idols are of terra-cotta or baked red clay, and are about from seven to eight inches high. They are usually hollow within, and represent the goddess draped, but with bare, protuberant breasts, and wearing a tire or moon-shaped ornament on the head.

These smaller images must have been the personal or household gods which we find so often referred to; while for the public worship doubtless a larger idol was set up.

A thorough exploration of the "high places" of Palestine, which abound, would no doubt prove of great importance, and add largely to our knowledge of the religion and ancient customs of the early inhabitants of the land. — HENRY GILLMAN, *Jerusalem, Palestine, April 16th, 1891.*

The Mika Operation.—The rite known as the Mika Operation, performed by the natives of Australia, is supposed by most observers to be for the purpose of limiting the population. Mr. R. Ethridge, however, agrees with Mr. J. Frazer that the custom is a remnant of a forgotten religious ceremony. (Proc. Linnean Society of New South Wales, Vol. V., pp. 255-258.)

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Boston Society of Natural History.—April 15th.—Dr. R. R. Andrews read a paper on "The Development of the Enamel of the Teeth," illustrated by the stereopticon. The annual meeting of the society was held on Wednesday evening, May 6th, at 7¾ o'clock. Business: The curator, secretary, and treasurer read their annual reports. The directors of the Natural History Gardens and Aquaria presented their first report. Officers for 1891-'92 were elected. Dr. C.-S. Minot spoke on the "Evolution of the Head."

May 20th.—Business: Election of a councillor for one year. Prof. W. O. Crosby read a paper on the "Geology of Hingham." Mr. G. H. Barton described a "Glacial Pot-Hole at Pearl Hill, Fitchburg, Massachusetts."—J. WALTER FEWKES, *Secretary.*

Biological Society of Washington.—May 2.—The following communications were read: Dr. Theodore Gill—"On the Classification of the Apodal Fishes." Mr. B. T. Galloway—"Recent Progress in the Study of Plant Diseases." Dr. Frank Baker—"Notes on Dwarfs." Mr. Charles Hallock—"Distribution of Fishes by Under-ground Water-Courses." Mr. F. C. Test—"Notes on the Dentition of *Desmognathus*." Mr. J. M. Holzinger—"Incentives to Natural History Work."